10-04-04

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PTO/SB/21 (04-04)

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/817,032
Filing Date	April 2, 2004
First Named Inventor	TANAKA, Atsushi
Art Unit	2186
Examiner Name	Unassigned
Total Number of Pages in This Submission: 11	Attorney Docket Number: 16869K-112900US

ENCLOSURES *(Check all that apply)*

- ☒ Fee Transmittal Form (in duplicate)
- ☐ Fee Attached
- ☐ Amendment/Reply
- ☐ After Final
- ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
- ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☒ Petition To Make Special (8 pages)
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
- ☐ After Allowance Communication to Technology Center (TC)
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Other Enclosure(s) (please identify below):

Return Postcard

Nine (9) cited references

Remarks The Commissioner is authorized to charge any additional fees to Deposit Account 20-1430.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Townsend and Townsend and Crew LLP Chun-Pok Leung Reg. No. 41,405
Signature	
Date	October 1, 2004

CERTIFICATE OF TRANSMISSION/MAILING

Express Mail Label: **EV 530887092 US**

I hereby certify that this correspondence is being deposited with the United States Postal Service with "Express Mail Post Office to Address" service under 37 CFR 1.10 on this date **October 1, 2004** and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Joy Salvador		
Signature		Date	October 1, 2004

60322599 v1

FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 130.00

Complete if Known	
Application Number	10/817,032
Filing Date	April 2, 2004
First Named Inventor	TANAKA, Atsushi
Examiner Name	Unassigned
Art Unit	2186
Attorney Docket No.	16869K-112900US

METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit Card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number: 20-1430

Deposit Account Name: Townsend and Townsend and Crew LLP

The Director is authorized to: *(check all that apply)*

☒ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, **except for the filing fee** to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($)0.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

			Extra Claims		Fee from below	Fee Paid
Total Claims		-** =		X		=
Independent Claims		-** =		X		=
Multiple Dependent				X		=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)0.00

**or number previously paid, if greater; For Reissues, see above*

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive – unavoidable	
1453	1,330	2453	665	Petition to revive – unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	130
1807	50	1807	50	Petitions related to provisional applications	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) ———————————

*Reduced by Basic Filing Fee Paid **SUBTOTAL (3)** ($)130.00

SUBMITTED BY *Complete (if applicable)*

Name (Print/Type)	Chun-Pok Leung	Registration No. (Attorney/Agent)	41,405	Telephone	650-326-2400
Signature				Date	October 1, 2004

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

PATENT
Attorney Docket No.: 16869K-112900US
Client Ref. No.: 705/SM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

ATSUSHI TANAKA

Application No.: 10/817,032

Filed: April 2, 2004

For: NETWORK CONVERTER AND INFORMATION PROCESSING SYSTEM

Customer No.: 20350

Examiner: Unassigned

Technology Center/Art Unit: 2186

Confirmation No.: 2793

PETITION TO MAKE SPECIAL FOR NEW APPLICATION UNDER M.P.E.P. § 708.02, VIII & 37 C.F.R. § 1.102(d)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is a petition to make special the above-identified application under MPEP § 708.02, VIII & 37 C.F.R. § 1.102(d). The application has not received any examination by an Examiner.

(a) The Commissioner is authorized to charge the petition fee of $130 under 37 C.F.R. § 1.17(i) and any other fees associated with this paper to Deposit Account 20-1430.

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(b) All the claims are believed to be directed to a single invention. If the Office determines that all the claims presented are not obviously directed to a single invention, then Applicants will make an election without traverse as a prerequisite to the grant of special status.

(c) Pre-examination searches were made of U.S. issued patents, including a classification search and a computer database search. The searches were performed on or around August 31, 2004, and were conducted by a professional search firm, Kramer & Amado, P.C. The classification search covered Classes 370 (subclasses 401, 466, 467, and 469) and 709 (subclasses 203, 223, 229, 230, 231, 232, 246, and 250) for the U.S. and foreign subclasses identified above. The computer database search was conducted on the USPTO systems EAST and WEST. The inventors further provided five references considered most closely related to the subject matter of the present application (see references #5-9 below), which were cited in the Information Disclosure Statement filed with the application on March 31, 2004 and on July 8, 2004.

(d) The following references, copies of which are attached herewith, are deemed most closely related to the subject matter encompassed by the claims:

(1) U.S. Patent No. 6,683,883;

(2) U.S. Patent Publication No. 2004/0019686 A1;

(3) U.S. Patent Publication No. 2003/0149829 A1;

(4) U.S. Patent Publication No. 2004/0148376 A1;

(5) U.S. Patent Publication No. 2003/0140193 A1;

(6) Japanese Patent Publication No. JP 2000-276406;

(7) Japanese Patent Publication No. JP 2002-318725;

(8) Julian Salran & Kalman Meth, IBM, "IP Storage Working Group icsc1," January 19, 2003; and

(9) CISCO, "Cisco SN5428 Storage Router Software Configuration Guide, Chapter 1," SN 5428 Storage Router Overview, www.ietf.org.

(e) Set forth below is a detailed discussion of references which points out with particularity how the claimed subject matter is distinguishable over the references.

A. Claimed Embodiments of the Present Invention

The claimed embodiments relate to a network converter and an information processing system.

Independent claim 1 recites an information processing system comprising an information processing device; a storage device which has a plurality of storage areas and a storage section storing a security management table for registering information about access enable/disable to each of the plurality of storage areas from the information processing device; a network converter connected to the information processing device and the storage device so as to be communicable; and a management terminal connected to the storage device and the network converter so as to be communicable. The network converter comprises a first protocol conversion section which converts data received from the information processing device according to a first protocol into data having a form determined by a Fibre Channel protocol and transmits the data to the storage device; a second protocol conversion section which converts data received from the storage device according to the Fibre Channel protocol into data having a form determined by the first protocol and transmits the data to the information processing device; a conversion table storage section which stores in a conversion table a combination of a first identification number which is a number for identifying the information processing device and the storage device according to the first protocol, and a second identification number which is a number for identifying the information processing device and the storage device according to the Fibre Channel protocol; a first identification number conversion section which converts the first identification number into the second identification number in accordance with contents stored in the conversion table; and a second identification number conversion section which converts the second identification number into the first identification number in accordance with contents stored in the conversion table. The management terminal notifies the storage

device of information about access enable/disable to each of the plurality of storage areas from the information processing device, determines a combination of the first identification number and the second identification number related to each of the information processing device and the storage device based on the information about the access enable/disable and notifies the network converter of information about the combination of the first identification number and the second identification number.

Independent claim 7 recites a network converter connected to an information processing device and a storage device so as to be communicable. The network converter comprises a first protocol conversion section which converts data received from the information processing device according to a first protocol into data having a form determined by a Fibre Channel protocol and transmits the data to the storage device ; a second protocol conversion section which converts data received from the storage device according to the Fibre Channel protocol into data having a form determined by the first protocol and transmits the data to the information processing device; a conversion table storage section which stores in a conversion table a combination of a first identification number which is a number for identifying the information processing device and the storage device according to the first protocol, and a second identification number which is a number for identifying the information processing device and the storage device according to the Fibre Channel protocol; a first identification number conversion section which converts the first identification number into the second identification number in accordance with contents stored in the conversion table; and a second identification number conversion section which converts the second identification number into the first identification number in accordance with contents stored in the conversion table.

B. Discussion of the References

None of the following references disclose a network converter that includes a conversion table storage section which stores in a conversion table a combination of a first identification number which is a number for identifying the information processing device and the storage device according to the first protocol, and a second identification number which is a number for identifying the information processing device and the storage device according to the Fibre Channel protocol; a first identification number conversion section which converts the first identification number into the second identification number in

accordance with contents stored in the conversion table; and a second identification number conversion section which converts the second identification number into the first identification number in accordance with contents stored in the conversion table.

The references further fail to teach a management terminal that notifies the storage device of information about access enable/disable to each of the plurality of storage areas from the information processing device, determines a combination of the first identification number and the second identification number related to each of the information processing device and the storage device based on the information about the access enable/disable and notifies the network converter of information about the combination of the first identification number and the second identification number.

1. U.S. Patent No. 6,683,883

This reference discloses an ISCSI-FCP gateway for transferring information between an iSCSI device operating under an iSCSI protocol within a TCP/IP network and a SCSI over Fiber Channel (FCP) device operating under an FCP protocol within an FC network.

2. U.S. Patent Publication No. 2004/0019686 A1

This reference discloses a switching node apparatus for storage network and a method of accessing remote storage apparatus with a protocol conversion such as the iSCSI for mapping the SCSI used in the SAN into the IP, FCIP (Fibre Channel over TCP/IP) for tunneling FCP to the IP network, and an iFCP (Internet Fibre Channel Protocol). See [0063].

3. U.S. Patent Publication No. 2003/0149829 A1

This reference discloses an implicit addressing sequential media drive with intervening converter simulating explicit addressing to host applications with a router/gateway or another known construct utilized to convert between different protocols. For example, the converter 108 may convert between iSCSI or SCSI protocol from the network 106 and Fibre Channel protocol at the device. See [0026].

4. U.S. Patent Publication No. 2004/0148376 A1

This reference discloses a storage area network processing device combining the iSCSI protocol stack with the Fibre Channel protocol stack and translating between the two to achieve iSCSI-FC gateway functionality. See [0036].

5. U.S. Patent Publication No. 2003/0140193 A1

This reference relates to methods, apparatus and systems for virtualization of iSCSI storage. Virtual storage isolates the clients from the management of physical storage resources. Each physical storage device supports multiple logical units (LUNs). Each supported LUN is associated with a separate TCP port number and iSCSI commands received on a given port implicitly refer to the associated LUN. An iSCSI host addresses each logical unit of storage (LUN) with a virtual IP address and port number. Using an address translation table, the virtualization gateway rewrites the destination IP address in the header of an incoming packet as well as the destination port number to correspond to the target physical LUN. Migration of logical units across physical storage devices is supported by changing the address translation entries at the gateway; and the gateway can be provided by a standard network router with support for address translation.

6. Japanese Patent Publication No. JP 2000-276406

This reference discloses a technique to prevent illegal access by selectively limiting access from a host device to a storage area in a storage subsystem. The storage subsystem 1201 is connected to the host device 1203 by a port 1202 which has multiple fiber channel interfaces. The storage subsystem 1201 has a communication control part 1211, and sends and receives information to and from a communication control 1214 to a device 1213 for maintenance through a communication line 1212 to maintain the storage subsystem 1201, and also set whether or not the host device 1203 is allowed to gain access by relating N-Port-Name and a specific storage area of LU 1210 with each other. Through the setting, access from the host device 1203 to the specific storage area in the storage subsystem 1201 is selectively limited. Consequently, illegal access can be prevented.

7. Japanese Patent Publication No. JP 2002-318725

This reference relates to a technique to provide a security function equal to a conventional LUN security in a disk array connected to a network by iSCSI technology. The system is provided with means for holding a plurality of IP addresses inside the disk array, means for making the IP address correspond to an LU, and means for filtering transfer by watching the IP address to be used for transfer. Then the IP address is made to correspond to the LU and the permission/no permission of transfer is set for every set IP addresses by a managing terminal; thus the filtering based on the IP address corresponding to the LU is realized on the disk array and a router.

8. Julian Salran & Kalman Meth, IBM, "IP Storage Working Group icsc1," January 19, 2003

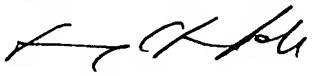
This reference relates to details of the iSCSI (internet Small Computer Systems Interface) protocol which is used between an information processing device and a storage device.

9. CISCO, "Cisco SN5428 Storage Router Software Configuration Guide, Chapter 1," SN 5428 Storage Router Overview, www.ietf.org

This reference discloses a WWN allocation section that sequentially allocates WWNs, which are set in a WWN management table stored in a memory, to the respective information processing devices. Thus, a different WWN may be allocated to the same information processing device for each access. Consequently it is impossible to realize the LUN security using the WWNs in the storage device. Accordingly, the network converter includes the extended instruction issuing section which inserts an iSCSI name of the information processing device into an FC frame. The FC frame is not an instruction prepared in the Fiber Channel protocol. Thus, in order to realize the LUN security using the FC frame, it is required that an extended instruction analysis section which analyzes the frame is provided in the storage device. The extended instruction analysis section obtains the iSCSI name of the information processing device from the FC frame and controls the LUN security based on a security management table. See present specification at page 3, lines 3-21.

(f) In view of this petition, the Examiner is respectfully requested to issue a first Office Action at an early date.

Respectfully submitted,



Chun-Pok Leung
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